

Amendment to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1-6 (Cancelled)

Claim 7 (Currently amended): A method of providing a wide field of view (FOV) to a head mounted display comprising the steps of:

(a) combining an Artificial Reality Center (ARC) display component and an optical tiling component display; and,

(b) integrating said display component and said optical tiling component display produce a left projected image and a right projected image, ~~whereby~~ wherein an overall binocular field of view (FOV) greater than about 80 degrees is realized from the left projected image tiled with the right projected image.

Claim 8 (Original).

Claim 9 (Cancelled).

Claim 10 (Currently amended) The method of claim 7 wherein the combining step also includes a compact lens when the distance between the ARC display component and said optical tiling component display is less ~~smaller~~ than approximately 150 mm.

Claim 11 (Original).

Claims 12-20 (Cancelled).

Claim 21 (New): An optical projection system comprising:

A single optical tiling system for producing a tiled projected image; and
a retroreflective surface for receiving and reflecting said tiled projected optical image for viewing.

Claim 22 (New) The system of claim 21 wherein said optical tiling system comprises:

a side projection system for projecting a side image;
a top projection system for projecting a top image; and
an optical tiling component for receiving and reflecting said side image and said top image to form said tiled projected optical image at said retroreflective surface.

Claim 23 (New) The system of claim 22 wherein said optical tiling component comprises:

an optical cube; and
an optical wedge connected with said optical cube, wherein said optical cube and said optical wedge reflect said side image and said top image.

Claim 24 (New) The system of claim 23 wherein said optical wedge deflects said side image to achieve optical tiling in a horizontal direction.

Claim 25 (New) The system of claim 21 wherein said optical tiling system includes:

a left and a right optical tiling system for producing a left and a right tiled projected image, wherein said left and said right tiled projected image covers a greater than approximately 80 degrees field of view per side.

Claim 26 (New) The system of claim 22 wherein said left and said right tiled optical projected image overlap to provide said tiled projected optical image covering a horizontal field of view greater than approximately 70 degrees.

Claim 27 (New) The system of claim 26 wherein the overlapped left and right tiled projected optical image provide greater than approximately 50 degree vertical field of view.

Claim 28 (New) The system of claim 25 wherein each of said left and said right optical tiling system comprise:

- a side projector for projecting a side image;
- a top projector for projecting a top image; and
- an optical tiling component for receiving and reflecting said side image and said top image to produce said tiled projected image at said reflective surface for viewing.

Claim 29 (New) The system of claim 28 wherein said tiled projected optical image covers greater than approximately 120 degree horizontal field of view.

Claim 30 (New) The system of claim 21, wherein said retroreflective surface is an Artificial Reality Center (ARC) display component having a greater than approximately 70 degrees field of retroreflection.

Claim 31 (New) The system of claim 30 wherein said ARC display component is located at a distance greater than approximately one-half meter from said optical tiling system.

Claim 32 (New) The system of claim 21, wherein the optical projection system is used with a helmet to provide a head mounted projection display.

Claim 33 (New) The system of claim 32 wherein said ARC display component is located at a distance approximately 100 mm from the head mounted projection display, said system including:

a compact lens located between said optical projection system and said retroreflective surface.

Claim 34 (New) The method of claim 7 wherein said integrating step includes:

- providing optical tiling component for a left eye of the user; and
- providing optical tiling component for a right eye of the user, wherein said optical tiling for the left eye and said optical tiling for said right eye provides said overall binocular FOV.

Claim 35 (new) The method of claim 34 wherein said integrating step further includes:

- projecting a left and a right top image; and
- projecting a left and a right side image, wherein said left and said right top image is tiled with a corresponding one of said left and said right side image to produce a left and a right tiled optical image.

Claim 36 (New) The method of claim 35 wherein said left and said right tiled optical image overlap.

Claim 37 (New) The method of claim 34, wherein said optical tiling for the left eye and said optical tiling for said right eye provides said overall binocular horizontal FOV greater than approximately 120 degrees.

Claim 38 (New) A head mounted projection display (HMPD) comprising:

- an optical tiling system for producing and tiling a left and a right projected image to produce a tiled projected image; and

- an artificial reality center display having a greater than approximately 70 degrees field of retroreflection for receiving and retro-reflecting said tiled projected image to a user.

Claim 39 (New) The HMPD of claim 38 wherein said optical tiling system comprises:

- a left and a right optical tiling system comprising

Claim 40 (New) The HMPD of claim 39 wherein each of said left and said right optical tiling system comprises:

- a top projection system for projecting a top image;

- a side projection system for projecting a side image; and

- an optical tiling component for receiving and reflecting said top and said side image to produce said tiled projected image.